

Literature Search Procedures

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Outline

1. Responsibilities/Schedule
2. Journals and Papers
3. Particle Codes
4. Problems

Responsibilities/Schedule

- Two persons (Charles Wohl from LBNL and SE from Novosibirsk) are regularly scanning more than 20 journals
- A regular list includes 25 journals, sometimes “non-standard” magazines appear, e.g., Nature, PTP or JPSJ
- Papers of potential interest are assigned one or more codes describing particles a paper deals with
- Three times a year (September 15, December 1, January 15) results are sent to overseers at LBNL via Piotr, some important measurements may be added on March 1
- In addition, SE selects papers on unstable mesons to be distributed among the Meson Team members
- Correspondence with major collaborations helps in selection, e.g., already accepted papers are included

Journals and Papers – I

N	Journal	Papers	N	Journal	Papers
1	Astropart. Physics	2 (0)	13	Phys. Rev. D	104 (119)
2	Europhys. Lett.	0 (1)	14	Phys. Rev. Lett.	72 (50)
3	Int. Journ. of Mod. Phys. A	5 (3)	15	Phys. Lett. B	33 (32)
4	JHEP	6 (5)	16	Phys. Atom. Nucl.	2 (4)
5	Journal of Physics G	0 (2)	17	Part. and Nucl.	0 (1)
6	JETP	1 (1)	18	Part. and Nucl. Lett.	0 (0)
7	JETP Lett.	2 (3)	19	Phys. Rep.	1 (2)
8	Mod. Phys. Lett. A	5 (3)	20	Rev. Mod. Phys.	0 (0)
9	New J. Phys.	2 (3)	21	Physics - Uspekhi	0 (0)
10	Nucl. Phys. A	4 (1)	22	Eur. Phys. J. A	3 (4)
11	Nucl. Phys. B	1 (3)	23	Eur. Phys. J. C	8 (21)
12	Phys. Rev. C	8 (10)	24	J. Cosm. A/P. P.	13 (0)

Journals and Papers – II

Journal	LBNL, N(%)	CERN, N(%)	All, N(%)
Phys. Rev. D	104 (38.2)	119 (44.4)	223 (41.3)
Phys. Rev. Lett.	72 (26.5)	50 (18.7)	122 (22.6)
Phys. Lett. B	33 (12.1)	32 (11.9)	65 (12.0)
Eur. J. Phys. C	8 (2.9)	21 (7.8)	29 (5.4)
Phys. Rev. C	8 (2.9)	10 (3.7)	29 (3.3)
J. Cosm. A/P. P.	13 (4.8)	0 (0)	13 (2.4)
Others	34 (12.5)	36 (13.5)	70 (13.0)

Particle Codes

Each particle has its unique identifier (a code),
currently 353 (208 +145) codes altogether

- Gauge bosons – 8 (γ , g , graviton, W , Z , H , heavy bosons, axion)
- Leptons – 10
- Quarks – 9 (u, d, s, (u,d,s), c, b, t, t', free quarks)
- Stable mesons – 21 (π , η , K , D , B)
- Baryons – 142 (p , n , $N(1440)$, \dots , $\Delta(1232)$, \dots)
- Searches – 6 (Monopoles, SUSY, T/C, Compositeness, Extra dim., WIMPs)
- Unstable mesons – 145

LHC can necessitate appearance of new codes

Problems

- What exactly should we look for in addition to particle properties?
An example of “Single t-quark production cross section”
- Do we need new particles, e.g., Dark energy and
new minireviews on existing properties, e.g., $\pi(K)$ radii
- A list of the codes is too long, e.g., too detailed baryons,
but some important ones are missing: $|V_{ub}|$, $|V_{uc}|$ are there, but no $|V_{ud(s)}|$
Now fixed – a new code RCKM
- Also missing are codes for tests of conservation laws.
How does the corresponding overseer pick up this info?
Now fixed – a new code RCON
- What happens with papers on the determination
of fundamental parameters: α , α_s , f_π , f_K , f_D , ...
Now fixed – a new code RQCD
- Review authors should have access to the results of literature search
and use them as well as standard averaging in their reviews